

# ALTM GEN2 Mini

Embedded Iridium STL Module  
providing accurate PNT information



## GPS Independent PNT

LEO-Based Position & Timing for  
GPS-Denied Environments



## Embeddable

Intended for Third-Party Integration



## Optimized Performance

Low SWaP, Accurate, Reliable

## Alternative Location Timing Module (ALTM)

Alternative Location and Timing Module (ALTM) GEN2 Mini delivers reliable, continuous access to Position, Navigation, and Timing (PNT) information, independent of GPS. The standardized, small-form-factor AltNav receiver leverages a signal 1000x stronger than GPS to effectively operate in GPS-denied environments, including indoors and in jamming/spoofing environments.

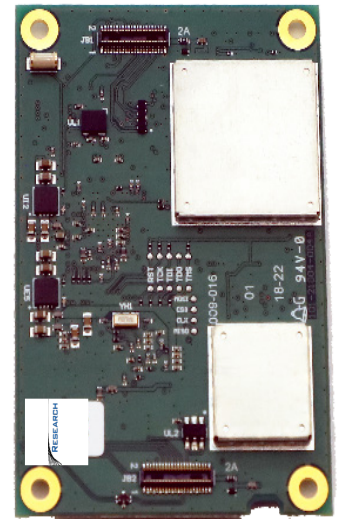
The mission-ready ALTM GEN2 Mini is equipped with the highest US DoD Technology Readiness Level (TRL) of 9 and is ideal for use in dismounted, ground-vehicle, and airborne operations. Pair the low size, weight, and power (SWaP) device with a versatile NAL Research SBD modem for a complete global asset tracking solution that provides accurate timing, location, and data.

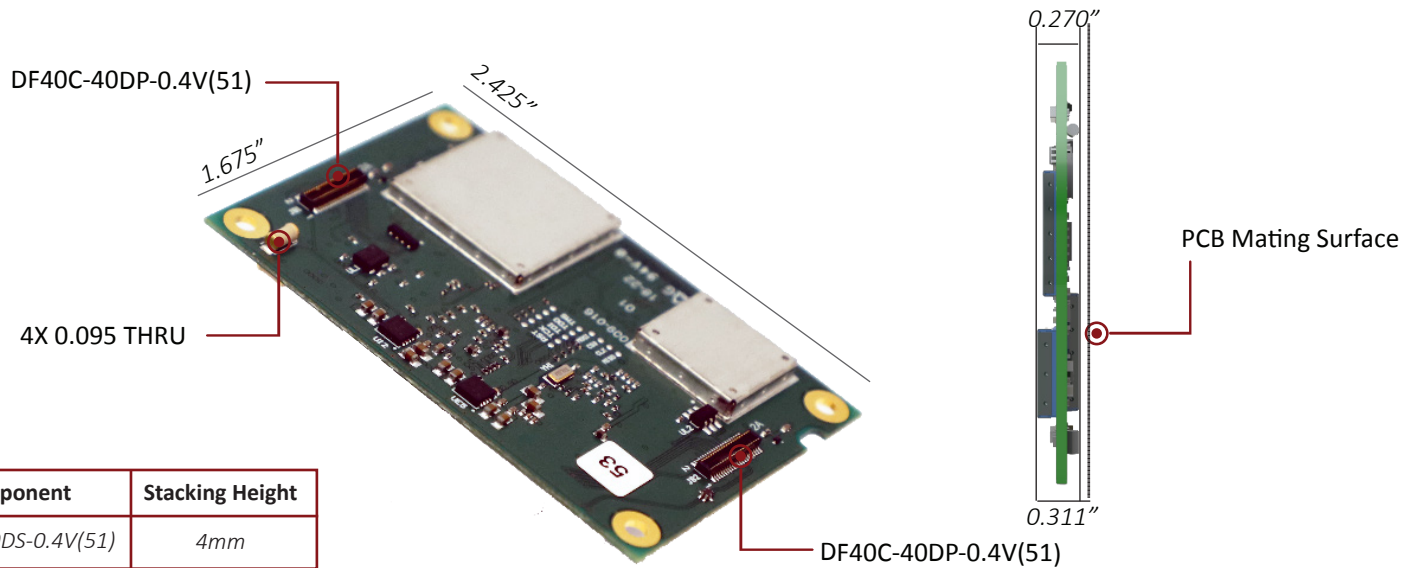
ALTM GEN2 Mini combines a satellite receiver, UART for serial port input for high-accuracy commercial or military GPS, UART serial port for data I/O, and a 1-PPS timing signal. For robust operation and easy integration, ALTM GEN2 Mini uses two 40-pin Hirose connectors with power and digital interfaces for PNT messages.

### Key Features

- 1) Choice of IS-GPS-153 or NMEA message format
- 2) External GNSS PNT input combined with integrity checking, blended decision logic, and AltNav PNT provide an ideal solution for most accurate position/location information (PLI)
- 3) Low-data processing latency at high burst rates
- 4) Approx. 1W power consumption and 26 sq. cm
- 5) Timing accuracy

### ALTM GEN2 Mini





Mating Component	Stacking Height
DF40HC-(4.0)-40DS-0.4V(51)	4mm

## Optional development kit includes\*:

- ALTM GEN2 mini receiver module
- ALTM development board
- Onboard uBlox GNSS receiver
- AC adapter, wall mount, 90-264VAC
- USB Micro-B data cable (6')
- SAF7352-IF, dual Iridium®/GPS antenna
- BNC male: MCX male coax cable, RG-316 (19.69")
- 20-Hours engineering support

\*Receiver sold separately. Complete development kit available upon request.

## Device Specifications

<b>Weight:</b>	0.455 oz (12.9 g)
<b>Dimensions:</b>	2.425" x 1.675" x 0.270" (61.6 x 42.5 x 6.86 mm)
<b>Interface connector:</b>	2x Hirose DF40C-40DP-0.4V(51)
<b>Mating connector:</b>	Hirose DF40HC-(4.0)-40DS-0.4V(51)
<b>AltNav RF connector:</b>	U.FL Connector Receptacle, Male, Surface Mount
<b>Mounting:</b>	4x Mounting Holes, 0.095" OD
<b>Operating temperature:</b>	-40°F to +185°F (-40°C to +85°C)
<b>Input voltage range:</b>	4.0 - 5.5 VDC
<b>Avg. power:</b>	1.05 ± 0.1W
<b>Avg. current consumption:</b>	210mA @ 5.0 VDC
<b>Recommended antenna:</b>	Passive Iridium Helical
<b>Position accuracy:</b>	
<i>Static position accuracy:</i>	Typically < 25m, with 400 BPM and C/No > 65
<i>Dynamic position accuracy:</i>	Typically < 200m, depending on dynamics of motion, with 400 BPM and C/No > 65
<b>Timing accuracy:</b>	< 300ns RMS
<b>Startup time:</b>	1.05 ± 0.1W
<i>Cold start:</i>	Typical 3 - 5 minutes to < 50m
<i>Hot start:</i>	Typical 2 - 3 minutes to 50m, Initial guess

NAL has implemented 12 messages compliant to the IS-GPS-153 protocol specification. These consist of standard IS-GPS-153 messages and 153 messages providing specific satellite vehicle information.